

MORAVIA  
SPEC. COLL.





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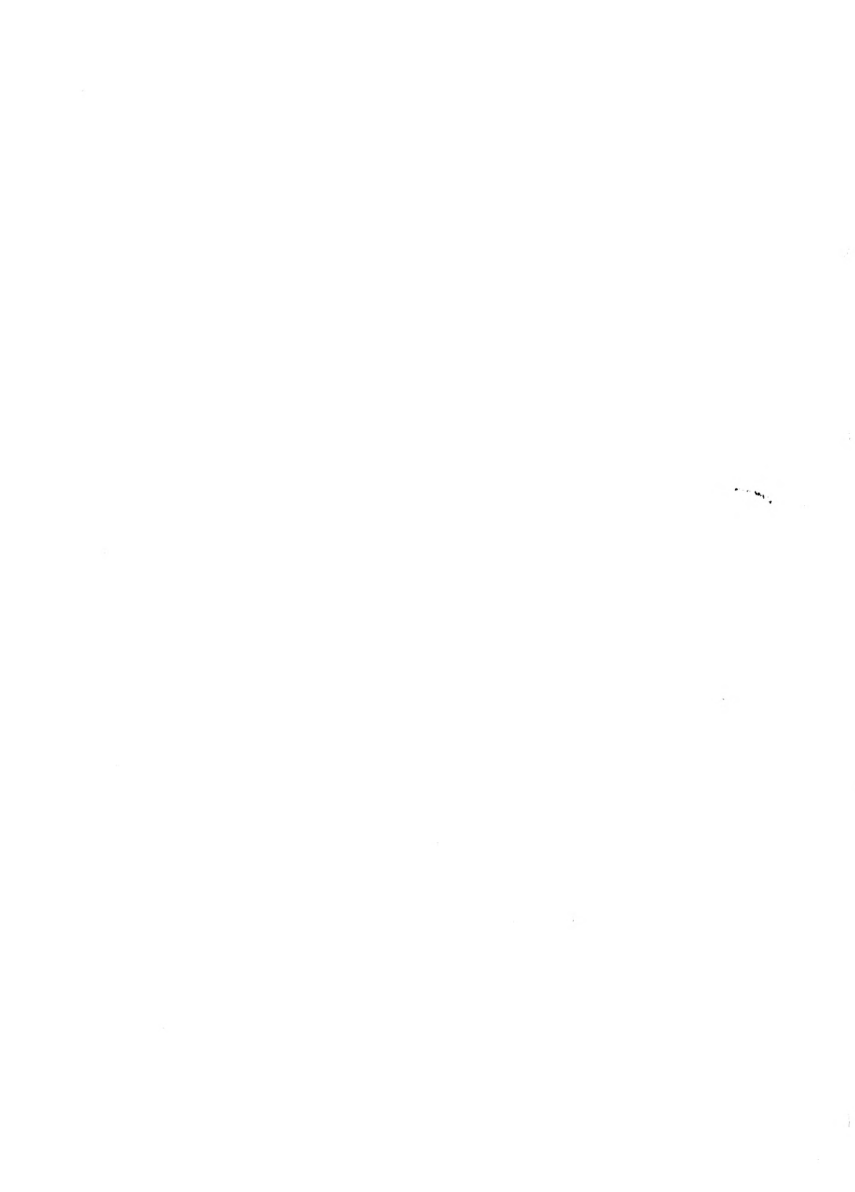




and, by the method of partial or net correlation, to hold these variables constant and thus more accurately bracket the effect of illiteracy on the death rates.

Illiteracy and ignorance must not be taken as synonymous. Schooling helps experience and worldly wisdom but never wholly replaces it but the ability to read and write is fundamental and lack of this is such a handicap that illiteracy implies ignorance. Some ignorant persons may be illiterate but most illiterates are ignorant. Intelligence, however, implies general ability but untrained, its usefulness is restricted, and such a condition is true of an illiterate.

Five and a half million people in this country  
over ten years of age are illiterate or nearly



1910 and 1920. In 1910, there, over a million and a half illiterate. These illiterates were composed of: native born (1,534,373), foreign born (1,650,361), negro (2,237,731), and others (103,859). Every class of illiterates has decreased excepting the foreign born which, during the last thirty-five years, has not balanced the decrease of the other classes. The negro illiterates have decreased from 3,150,000 in 1880 to 2,237,731 in 1910, native born white illiterates have decreased from 2,255,460 to 1,534,373 and since 1890, there has been a decrease of illiteracy among native born of native parents from 1,620,723 to 1,378,884, while among native born of foreign or mixed parentage from 174,280 to 153,388.

Percentage of illiteracy among native whites, and foreign born, and negroes at certain periods.				
	1880	1890	1900	1910
Native white				
percent of total population	75.1	73.0	74.5	74.4
percent of illiteracy	6.4	6.2	4.6	3.8
Foreign born				
percent of total population	10.1	11.5	11.4	11.5
percent of illiteracy	19.0	11.5	12.9	11.7
Negroes				
percent of total population	10.1	11.2	11.2	10.7
percent of illiteracy	68.0	50.1	44.1	40.4



The number of illiterates is steadily increasing--not in the South--but in Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Illinois, North Dakota, Nebraska, Louisiana, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, California. The greatest increase being in the New England and Middle Atlantic States, there having been an increase of approximately 140% in twenty years in these states while on the other hand there is a decrease of thirty percent in the same period in the South Atlantic States.

The percent of illiteracy in the United States has been lowered during twenty years from 13.3% in 1890 to 10.7 in 1900 and 7.7% in 1910; but the number of illiterates has decreased less than 15% and the number of foreign born illiterates has increased 43%.

Prior to 1860, changes in illiteracy were less striking due to a more literate type of immigrant who came mainly from Canada, England, and countries in Northwestern Europe.

More than two thirds of all illiterates are country dwellers (3,748,031) of whom 1,948,473 are native whites, 477,870 foreign born, 1,934,458 negroes.









... (7.8) is ...  
 ... (7.6) due to ...  
 ...

Percentage of ...			
Iowa	1.7	New York	7.8
Illinois	1.9	New Jersey	6.6
Michigan	1.9	Alabama	6.6
Indiana	1.0	Pennsylvania	6.9
Idaho	2.2	Connecticut	6.0
Kansas	2.2	Georgia	6.7
Kentucky	2.5	Maryland	7.3
North Dakota	2.9	Rhode Island	7.7
Minnesota	3.0	Delaware	8.1
Wisconsin	3.1	West Virginia	8.3
North Dakota	3.1	Texas	9.9
Michigan	3.2	New York	12.1
Ohio	3.2	Arkansas	12.6
Massachusetts	3.2	Tennessee	12.6
California	3.3	Florida	12.8
California	3.7	Virginia	15.2
Colorado	3.7	North Carolina	15.5
Illinois	3.7	New Mexico	20.1
Vermont	3.7	Georgia	20.7
Monte	4.1	Arizona	20.9
Missouri	4.3	Mississippi	22.4
New Hampshire	4.6	Alabama	22.9
Montana	4.8	South Carolina	25.7
Washington	4.9	Delaware	26.0
Washington	5.2		



The United States Census of 1910 was used to determine the number of illiterates over 10 years of age, the population, the percent of negroes; and figures from the Mortality Statistics of the United States registration area 1910 were used to determine the death rates. It was hoped to include the rural counties in the problem as well as the cities over 10,000 but it was found impossible because the rural counties in the census figures included cities over 10,000 and the rural counties in the mortality statistics did not include these cities. In addition, the percentage of illiterates and negroes would have had to be calculated for all of which time was lacking. Therefore the experience is limited to four hundred and sixty one cities of the United States of over 10,000 population, of which one of these, South Sharon, Pennsylvania was omitted. This city had a population of just 10,140 yet had an illiteracy percent of 52.4, negroes 1.8, foreign born 50.1; but the death rates did not at all correspond having in most instances wide variation in the above percentages. New York City was divided into its boroughs in order to study the city in a small city as possible.



The several factors were: (1) population, (2) illiterates, (3) negroes (4) children (5) in all cities, (6) from England, (7) from Wales, (8) from Scotland, (9) from Ireland, (10) from the United States, (11) from Canada, (12) from the West Indies, (13) from the East Indies, (14) from the Philippines, (15) from the Malay Peninsula, (16) from the Dutch East Indies, (17) from the Dutch West Indies, (18) from the Dutch East Indies, (19) from the Dutch West Indies, (20) from the Dutch East Indies, (21) from the Dutch West Indies, (22) from the Dutch East Indies, (23) from the Dutch West Indies, (24) from the Dutch East Indies, (25) from the Dutch West Indies, (26) from the Dutch East Indies, (27) from the Dutch West Indies, (28) from the Dutch East Indies, (29) from the Dutch West Indies, (30) from the Dutch East Indies, (31) from the Dutch West Indies, (32) from the Dutch East Indies, (33) from the Dutch West Indies, (34) from the Dutch East Indies, (35) from the Dutch West Indies, (36) from the Dutch East Indies, (37) from the Dutch West Indies, (38) from the Dutch East Indies, (39) from the Dutch West Indies, (40) from the Dutch East Indies, (41) from the Dutch West Indies, (42) from the Dutch East Indies, (43) from the Dutch West Indies, (44) from the Dutch East Indies, (45) from the Dutch West Indies, (46) from the Dutch East Indies, (47) from the Dutch West Indies, (48) from the Dutch East Indies, (49) from the Dutch West Indies, (50) from the Dutch East Indies, (51) from the Dutch West Indies, (52) from the Dutch East Indies, (53) from the Dutch West Indies, (54) from the Dutch East Indies, (55) from the Dutch West Indies, (56) from the Dutch East Indies, (57) from the Dutch West Indies, (58) from the Dutch East Indies, (59) from the Dutch West Indies, (60) from the Dutch East Indies, (61) from the Dutch West Indies, (62) from the Dutch East Indies, (63) from the Dutch West Indies, (64) from the Dutch East Indies, (65) from the Dutch West Indies, (66) from the Dutch East Indies, (67) from the Dutch West Indies, (68) from the Dutch East Indies, (69) from the Dutch West Indies, (70) from the Dutch East Indies, (71) from the Dutch West Indies, (72) from the Dutch East Indies, (73) from the Dutch West Indies, (74) from the Dutch East Indies, (75) from the Dutch West Indies, (76) from the Dutch East Indies, (77) from the Dutch West Indies, (78) from the Dutch East Indies, (79) from the Dutch West Indies, (80) from the Dutch East Indies, (81) from the Dutch West Indies, (82) from the Dutch East Indies, (83) from the Dutch West Indies, (84) from the Dutch East Indies, (85) from the Dutch West Indies, (86) from the Dutch East Indies, (87) from the Dutch West Indies, (88) from the Dutch East Indies, (89) from the Dutch West Indies, (90) from the Dutch East Indies, (91) from the Dutch West Indies, (92) from the Dutch East Indies, (93) from the Dutch West Indies, (94) from the Dutch East Indies, (95) from the Dutch West Indies, (96) from the Dutch East Indies, (97) from the Dutch West Indies, (98) from the Dutch East Indies, (99) from the Dutch West Indies, (100) from the Dutch East Indies.

Percentage of foreign born was to be included in the tables but the differences in age distribution of the population in the various cities seemed too great a variable to overlook in this case and so was reserved for further work.

Thirty-nine correlation tables were set up between the various factors and their correlation coefficients were determined. Using these thirty-nine correlation coefficients, a series of partial correlation coefficients were obtained according to the regular formulae. No attempts were made to correct the tables for spurious correlation (it was decided that it played but little part in affecting the significant correlations). The material was set



enumerated. The Census Bureau, however, has not yet published the figures of population which have been ascertained for the various States.

The Census Report 1910 Volume I, page 1185, gives the definition upon which its figures of illiteracy are based: "The population reported for the census of 1910, like those for several previous censuses, contained two inquiries relating to illiteracy, namely, as to whether the person enumerated was able to read and as to whether he was able to write. Under the instructions to enumerators, 'ability to read or write in any language--not necessarily English, called for a affirmative answer. Answers to these questions were required only for persons ten years of age and over.

"For the present report, the Bureau of the Census has classified as illiterate all persons unable to write regardless of ability to read. A limited number of persons were reported as able to read but unable to write but the statistics in regard to this class have not been of sufficient importance to call for separate enumeration. In total, the 'literate' population is 10,000,000 and the 'illiterate' population is 1,000,000. The percentage of illiterates is 10 per cent. of the total population."









11	
11.34	.35 ± .03
14.22	.58 ± .037
13.24	.016 ± .002
	.48 ± .05
	.007 ± .005
	.47 ± .008

(1. ... ; 1 = ... ; 2 = ... ; 3 = ... ; 4 = ... )

(2) ... (3) ... (4) ... (5) ... (6) ... (7) ... (8) ... (9) ... (10) ...

... f ... c ...



e v

12.34	-	.04	+
14.33	-	.00	±
13.24	-	.00	±
	-	.00	±
	-	.078	±
	-	.00	±

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Time	12:34	14:22	12:14
Time	12:34	14:22	12:14

The first of the three is the basic  
 system, which is the most common  
 type of system. It is a system of  
 which the user is not aware of the  
 fact that it is a system, and it is  
 the only system that is not aware of  
 the fact that it is a system. The  
 second of the three is the system  
 which is aware of the fact that it is  
 a system, and it is the only system  
 which is aware of the fact that it is  
 a system. The third of the three is  
 the system which is aware of the fact  
 that it is a system, and it is the  
 only system which is aware of the fact  
 that it is a system.

















... ..  
... ..  
... .. The correlation coefficient  
between illiteracy and death rate from pneumonia is  
next to the highest coefficient obtained in the problem  
and it is but little changed when the net correlation  
coefficient is found. Vaughan lays great stress on  
the racial factor in affecting the death rate from  
pneumonia. He claims the negro is far more susceptible  
than the white man. Osler says of pneumonia: "It is  
a disease of cities, in the overcrowded districts  
of which there has been an increase of late particularly  
in America. .... In the United States, pneumonia is  
more fatal in negroes than among the whites. ....  
Individuals who are much exposed to hardship and cold  
are particularly liable to the disease. Newcomers and  
immigrants are stated to be less susceptible than  
native individuals." Being as liberal as possible,  
there is only slight positive correlation between  
negroes and the death rate from pneumonia and when  
formed into the net correlation coefficient the  
significance disappears entirely. I should not like  
to state that evidence that pneumonia is more  
fatal in negroes than among the whites since the  
data in hand is exactly that which Osler implies should



be studied: that of cities especially in the United States. He mentions New Orleans and Ancon and Colon Canal Zone as supporting his argument that the fatality among negroes was greater than among whites. Arguing from the above coefficients, could he not have been dealing with two extremes of degree of education in the Canal Zone which brought the difference out markedly while the same was more or less true in New Orleans. I believe that the difference of death rates between the races, is due to the greater percentage of illiteracy of the negroes rather than to the apparent racial difference.

Pneumonia evidently is a disease which the health officer also can attack successfully and to which he has paid only too little attention as yet. He must become an economist and a sociologist as well as a health officer to accomplish this but more and more it is appearing that the health officer must know how to apply the principles of economics in order to accomplish his best work.

There is almost significant negative net correlation between population and death rate from pneumonia holding illiteracy and negroes constant but it is not significant enough on which to base any conclusions.



will be the 100,000 square and points to the  
success of the 100,000 square in the latter  
cities but does not indicate overcrowding as a  
factor though the high density of population must  
be included to settle the point.

Tuberculosis of the lungs

Summary of correlation coefficients between death rate from tuberculosis of the lungs and several factors.	
Net correlation coefficient $R_{12.34}$	.010 ± .031
Net correlation coefficient $R_{12.34}$	.400 ± .030
Net correlation coefficient $R_{12.34}$	.094 ± .031
Partial coefficient of correlation	.156 ± .031
Population	.100 ± .031
Percentage of Negroes	.47 ± .031

[illegible]













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the price of better education and consequently better living, or is the relation merely due to faulty diagnosis. It is difficult to explain such a relatively high negative coefficient away because of faulty diagnosis. The death rate from all causes is distinctly positively correlated with illiteracy. This alone would show that education and all that it connotes increases the expectation of life even though we did not have data to prove this. Might it not well be that, since we are living longer than formerly and since we have to die of something, and since cancer is, relatively speaking, an older man's disease, the death rate from it is on the increase while the death rate from some of the leading diseases of the decrease.

I have found that cancer would be positively correlated with size of population of the cities which would be a good thing and would be a good thing.







Holt also states and illustrates that diarrhoeal diseases: "Diarrhoeal diseases are especially seen in cities, for these are the places of conditions of poverty, neglect, bad food, and bad hygiene, all of which are important causes. That overcrowding and bad housing in our large cities are not the chief factors is shown by the fact that the death rate from diarrhoeal diseases is often higher in smaller places, especially factory towns, than in large cities. Thus in New York State it has been higher in Troy, Cohoes, and Newburgh than in New York City, and in Massachusetts, higher in Fall River and Lowell than in Boston." The correlation coefficients bear out his statement excepting his claim that often diarrhoeal diseases are higher in smaller places for the correlation between population of cities and diarrhoea under two is absolutely insignificant even when illiteracy and negroes are held constant by net correlation.

At first sight, the negative net correlation between negroes and death rate from diarrhoea under two holding illiteracy and population constant is striking. But it might be explained in this wise: e.g. holding population constant at x and illiteracy constant at y and varying the negroes, it will be seen that since the correlation between illiteracy and death



























I		II	
1	$-.079 \pm .031$	1	$.123 \pm .031$
2	$-.075 \pm .031$	2	$.120 \pm .031$
3	$-.056 \pm .031$	3	$.067 \pm .031$
4	$-.000 \pm .031$	4	$.070 \pm .031$
		5	$.056 \pm .031$
		6	$.007 \pm .031$
		7	$.031 \pm .031$
		8	$.022 \pm .031$

I		II	
1	$-.106 \pm .031$	1	$.070 \pm .031$
2	$-.121 \pm .031$	2	$.149 \pm .031$
		3	$.145 \pm .031$
		4	$.108 \pm .031$
		5	$.000 \pm .031$
		6	$.100 \pm .031$
		7	$.080 \pm .031$
		8	$.020 \pm .031$
		9	$.003 \pm .031$
		10	$.110 \pm .031$



$.007 \pm .03$ $-.076 \pm .03$ $-.010 \pm .00$	$.11 \pm .0$ $.17 \pm .0$ $.17 \pm .0$ $.17 \pm .0$ $.17 \pm .0$ $.07 \pm .03$ $.07 \pm .03$ $.07 \pm .0$ $.07 \pm .0$ $.07 \pm .0$









Table 1. (continued)	
NO.	P.
1-1	.440 ± .030
1-2	.431 ± .031
1-3	.407 ± .031
1-4	.470 ± .031
1-5	.478 ± .031
1-6	.475 ± .031
1-7	.435 ± .031
1-8	.410 ± .031
1-9	.478 ± .031
1-10	.405 ± .030
1-11	.492 ± .030
1-12	.471 ± .031
1-13	.458 ± .031
1-14	.433 ± .031
1-15	.406 ± .031
1-16	.400 ± .031
1-17	.403 ± .031
1-18	.408 ± .031
1-19	.403 ± .031
1-20	.406 ± .031
1-21	.401 ± .031
1-22	.400 ± .031
1-23	.400 ± .031
1-24	.407 ± .031
1-25	.403 ± .031
1-26	.403 ± .031
1-27	.403 ± .031
1-28	.403 ± .031
1-29	.403 ± .031
1-30	.403 ± .031
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1-33	.403 ± .031
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1-41	.403 ± .031
1-42	.403 ± .031
1-43	.403 ± .031
1-44	.403 ± .031
1-45	.403 ± .031
1-46	.403 ± .031
1-47	.403 ± .031
1-48	.403 ± .031
1-49	.403 ± .031
1-50	.403 ± .031

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